

REMARKS/ARGUMENTS

Reconsideration of the present application, as amended, is respectfully requested.

The April 5, 2005 Office Action and the Examiner's comments have been carefully considered. In response, claims are cancelled and amended, and remarks are set forth below in a sincere effort to place the present application in form for allowance. The amendments are supported by the application as originally filed. Therefore, no new matter is added.

PRIOR ART REJECTIONS

In the Office Action claims 1-4 are rejected under 35 USC 102(b) as being anticipated by USP 5,477,422 (Hooker et al.). Claim 5 is rejected under 35 USC 103 as being unpatentable over Hooker et al. in view of USP 6,672,734 (Lammers). Claims 6 and 7 are rejected under 35 USC 103 as being unpatentable over Hooker et al. in view of Lammers, and further in view of USP 6,825,894 (Aoyagi et al.). Claims 8 and 9 are rejected under 35 USC 103 as being unpatentable over Hooker et al. in view of Aoyagi et al.

In response, claims 2 and 3 are cancelled, and claims 1, 4 and 6 are amended in a sincere effort to place the present claims in condition for allowance.

The present claimed invention as defined by amended independent claim 1, is directed to a surface-shaped light irradiation device including a dot light source (30, 31) which emits a light substantially radiately, and a light guiding plate (11) which includes a light entrance end surface (20a) from which a light emitted from the dot light source enters, a light emitting surface (20c) which is one principal surface for guiding the light entering from the light entrance end surface and emits a substantially uniform light therefrom, a back surface (20b) which is an other principal surface opposite to the light emitting surface, and a retaining section (21, 22) which retains the dot light source at a predetermined set position. The retaining section includes a wall which surrounds a periphery of the dot light surface. The wall is formed by the light entrance end surface (20a) positioned at one end of the light guiding plate. The dot light source is disposed in an area surrounded by the retaining section and the light entrance end surface, and is fixed to the retaining section by an adhesive agent (80) disposed between a surface of the dot light source, other than its light emitting surface, and the retaining section.

The device of the present claimed invention includes a light entrance end surface (20a) of the light guiding plate (20) on which is provided a retaining section (21, 22) which retains a

dot light source (30, 31) at a predetermined set position. The retaining section includes a wall which is formed so as to surround a periphery of the dot light source which is fixed to the retaining section by an adhesive agent disposed between a surface of the dot light source, other than the light emitting surface, and the retaining section.

According to this structure, even if the light guiding plate encounters repeated expansion and contraction due to changes in the atmospheric temperature and repetition of heating and cooling in accordance with turning on/off of the dot light source, the relative position of the dot light source with respect to the light guiding plate does not change. Therefore, it is possible to obtain an irradiation light having a uniform intensity distribution and sufficient average intensity which is stable for a long time by the surface-shaped light irradiation device using the dot light source.

As indicated above, claims 1-4 were rejected in the Office Action as being anticipated by Hooker et al.

USP 5,477,422 (Hooker et al.) discloses an illuminated liquid crystal apparatus in which a respective recess 4 is formed at the sides of a light guide 2, and LEDs 3 are present in the recess 4.

In comparing the present claimed invention recited in amended claim 1 with Hooker et al., the device of the present claimed invention is clearly patentable over Hooker et al. in that, inter alia, the retaining section of the light guiding plate includes a wall which surrounds a periphery of the dot light source, and the wall being formed on the light entrance end surface positioned at one end of the light guiding plate, and the dot light source is disposed in an area surrounded by the retaining section and the light entrance end surface, and is fixed to the retaining section by an adhesive agent disposed between a surface of the dot light source, other than the light emitting surface, and the retaining section.

In Hooker et al., the recess 4 is formed at the sides of the light guide 2, and LEDs 3 are present in the respective recess 4. The respective recess 4 is a concave portion formed at an edge portion of the light guide 2. There is no disclosure, teaching or suggestion of a structure that surrounds the LEDs 3 in Hooker et al. Also, there is no disclosure, teaching or suggestion of means for fixing a relative position of the LEDs 3 with respect to the light guiding plate.

In contrast to Hooker et al., the present claimed invention includes a retaining section which is formed on the light entrance end surface of the light guiding plate so as to surround

a periphery of said dot light source, and the dot light source is located at the area formed by the retaining section and the light entrance end surface, and the dot light source and the retaining section is fixed by the adhesive agent. The present invention is clearly distinct from Hooker et al. in the structure of the retaining section and the structure for fixing the dot light source.

Lammers discloses that the light sources are provided so as to be close to or abut against a light emitting edge surface of the light emitting panel, and Aoyagi et al. discloses that each constituent element of liquid crystal display device is fixed by a double-sided adhesive tape. However, neither of Lammers or Aoyagi discloses that the retaining section is formed by the light entrance end surface of the light guiding plate so as to surround a periphery of said dot light surface.

Further, in the present claimed invention, as described above, the retaining section is formed on the light entrance end surface of the light guiding plate so as to surround the periphery of the dot light source, and the dot light source is provided in the area formed by the retaining section and the light entrance end surface, and the dot light source and the retaining section are fixed to each other by adhesive agent. Therefore, even if the light guiding plate repeats thermal

expansion and contraction, since the relative position of the dot light source with respect to the light guiding plate does not change, the property of the surface-shaped light irradiation device is stabilized without causing an uneven intensity distribution even in a long-term use.

In view of the foregoing, claim 1 is patentable over the cited references because the references do not disclose, teach or suggest a surface-shaped light irradiation device including,

inter alia:

a light guiding plate including a retaining section which retains the dot light source at a predetermined set position, wherein the retaining section includes a wall which surrounds a periphery of the dot light source, the wall being formed by the light entrance end surface positioned at one end of the light guiding plate, and the dot light source is disposed in an area surrounded by the retaining section and the light entrance end surface, and is fixed to the retaining section by an adhesive agent disposed between a surface of the dot light source other than its light-emitting surface, and the retaining section (see claim 1, lines 15-24).

Claims 4-9 are either directly or indirectly dependent on claim 1 and are patentable over the cited references in view of their dependence on claim 1 and because the references do not disclose, teach or suggest each of the limitations set forth in claims 4-9.

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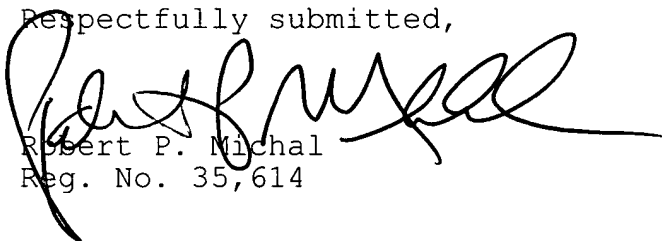
Appln. No. 10/748,814
Amendment dated July 1, 2005
Reply to Office Action of April 5, 2005

Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner disagrees with any of the foregoing, the Examiner is respectfully requested to point out where there is support for a contrary view.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Robert P. Michal', is written over the typed name and registration number.

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